

SUPPLEMENTAL PRELIMINARY AMENDMENT

Serial No.: 10/777,955

Filing Date: February 12, 2004

Title: ELECTROLUMINESCENT DRIVER CIRCUIT

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Attorney Docket No. 125.025US02

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (Original) A method of operating an EL-lamp circuit, the method comprising:

storing positive charge on a first electrode of a EL-lamp with a power supply; and
discharging the positive charge stored on the first electrode to a positive terminal of the
power supply.

2. (Original) The method of claim 1, wherein discharging the first electrode of the load further
comprises:

cycling on and off a discharge current path that couples the first electrode to ground; and
when the discharge current path is cycled on, conducting current from the first electrode
to the positive terminal of the power supply.

- A 3. (Original) The method of claim 2, wherein the discharge current path is off longer than it is
on during a cycle.

- A 4. (Original) The method of claim 1, further comprising: *the*
~~storing positive charge on a second different electrode of a load with the power supply;~~
and

~~discharging the positive charge stored on the second different electrode to the positive~~
terminal of the supply.

- A 5. (Original) The method of claim 4, wherein discharging the second electrode of the load
further comprises:

cycling on and off a discharge current path that couples the second different electrode to
ground; and

(4)
(5)A

PAGE 4/11 *RCVD AT 5/12/2004 12:27:34 PM [Eastern Daylight Time] *SVR:USPTO-EFXRF-1/2 *DNIS:8729308 *CSID:612 332 4731 *DURATION (mm:ss):03-10
R: 1-2, 18-~~20~~, 22-25, 27-31, 36-40
1=18

A: 3-17, 21, 26) 32-35

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when the discharge current path is cycled on, conducting current from the second different electrode to the positive terminal of the power supply with the use of an inductor.

6. (Original) A method of operating a cycle of an EL-lamp driver circuit, the method comprising:

placing a select amount of positive charge on a first electrode of a load with a power supply;

discharging the positive charge on the first electrode to a positive terminal of the power supply;

A placing a select amount of positive charge on a second electrode of the load with the power supply; and

discharging the positive charge on the second electrode to the positive terminal of the power supply.

7. (Original) The method of claim 6, wherein placing a select amount of positive charge on a first electrode of a load further comprises:

cycling on and off a charging current path through an inductor that is coupled between the positive terminal of the power supply and a negative terminal of the power supply; and
when the charging current path is off, coupling charge to the first electrode.

8. (Original) The method of claim 6, wherein placing a select amount of positive charge on a second electrode of a load further comprises:

cycling on and off a charging current path through an inductor that is coupled between the positive terminal of the power supply and a negative terminal of the power supply; and
when the charging current path is off, coupling charge to the second electrode.

9. (Original) The method of claim 6, wherein discharging the positive charge on the first electrode of the load further comprises:

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cycling on and off a discharge current path through an inductor that couples the first electrode to a positive terminal of the power supply; and

when the discharge current path is cycled on, conducting current from the first electrode to the positive terminal of the power supply.

10. (Original) The method of claim 6, wherein discharging the positive charge on the second electrode of the load further comprises:

cycling on and off a discharge current path through an inductor that couples the second electrode to ground; and

when the discharge current path is cycled on, conducting current from the second electrode to the positive terminal of the power supply.

11. (Original) A method of operating a cycle of an EL-lamp driver circuit, the method comprising:

placing a select amount of positive charge on a first electrode of a load with a power supply;

discharging the positive charge on the first electrode to a positive terminal of the power supply;

placing a select amount of negative charge on the first electrode of the load with the power supply; and

discharging the negative charge on the first electrode.

12. (Original) The method of claim 11, wherein placing a select amount of positive charge on the first electrode further comprises:

turning on a first current path between the positive terminal of the power supply and a first side of an inductor; and

cycling on and off a second current path between a second side of the inductor and ground.

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A 13. (Original) The method of claim 12, wherein the first current path is turned on by a first transistor and the second current path is cycled on and off by a second transistor.

14. (Original) The method of claim 11, wherein discharging the positive charge on the first electrode further comprises:

cycling on and off a third current path between the first electrode and the positive terminal of the power supply.

15. (Original) The method of claim 14, wherein the third current path is cycled on and off by a transistor.

16. (Original) The method of claim 11, wherein placing a select amount of negative charge on the first electrode further comprises:

turning on a second current path between a second side of an inductor and ground; and
cycling on and off a first current path between the positive terminal of the power supply and a first side of the inductor.

17. (Original) The method of claim 16, wherein the second current path is turned on by a second transistor and the first current path is cycled on and off by a first transistor.

18. (New) A method of operating an EL-lamp circuit, the method comprising:
storing energy from a power supply on an EL-lamp during a charging cycle; and
returning energy stored on the EL-lamp to the power supply during a discharge cycle.

19. (New) The method of claim 18, wherein storing energy from the power supply on an EL-lamp during a charging cycle further comprises:

cycling a first transistor in response to a first digital signal.

C0 L3 line 8

20. (New) The method of claim 19, further comprising:

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inductively pumping energy to the EL-lamp in response to the cycling of the first transistor. COL 3 line 59

A 21. (New) The method of claim 19, wherein the energy stored on the EL-lamp during a charging cycle is $1/2V^2C$, wherein V is the voltage and C is the capacitance of a load of the EL-lamp.

22. (New) The method of claim 18, wherein storing energy from the power supply on an EL-lamp during a charging cycle further comprises:

selectively creating a charging path to the EL-lamp.

COL 3 line 9

23. (New) The method of claim 22, wherein selectively creating a charging path further comprises:

selectively activating one or more switches.

COL 3 line 43

24. (New) The method of claim 18, wherein returning energy stored on the EL-lamp to the power supply during a discharge cycle further comprises:

selectively providing a discharge path to the power supply during the discharge cycle,

COL 4 line 18

25. (New) The method of claim 24, wherein selectively providing a discharge path to the power supply during a discharge cycle further comprises:

selectively switching one or more switches. COL 4 line 17

A 26. (New) The method of claim 24, wherein the discharge cycle is every half cycle.

27. (New) The method of claim 18, wherein returning energy stored on the EL-lamp to the power supply during a discharge cycle further comprises:

cycling a second discharge transistor in response to a second digital signal.

COL 4 line 15

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28. (New) The method of claim 27, further comprising:

inductively pumping energy stored on the EL-lamp back to the power supply in response to the cycling of the second transistor. COL 4 line 9

29. (New) The method of claim 18, wherein returning energy stored on the EL-lamp to the power supply during a discharge cycle further comprises:

selectively creating a discharge path to the power supply. COL 4 line 19

30. (New) The method of claim 29, wherein selectively creating a discharge path to the power supply further comprises:

activating one or more switches. (SW13) COL 4 line 18

31. (New) The method of claim 18, further comprising:

providing a charging path to the EL-lamp during the charging cycle; and COL 4 line 12

providing a discharging path to the power supply during the discharging cycle. COL 4 line 19

~~COL 3 line 2~~

32. (New) The method of claim 31, further comprising:

cycling a first transistor in response to a first digital signal during the charging cycle; and COL 3 line 8

cycling a second transistor in response to a second digital signal during the discharging COL 4 line 18

cycle. COL 4 line 16

A 33. (New) The method of claim 32, further comprising:

during an off period of the second digital signal, inductively conducting current from a negative terminal of the power supply to a positive terminal of the power supply.

A 34. (New) The method of claim 32, wherein the frequency of the first digital signal is different than the frequency of the second digital signal.

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A 35. (New) The method of claim 32, wherein an on portion of a cycle of the second digital signal is shorter than an off portion of the cycle of the second digital signal.

36. (New) A method of operating an EL-lamp circuit, the method comprising:
selectively providing a charging path from a power supply to the EL-lamp during a charging cycle; (COL 3 line 5) COL 3 line 7
cycling a first transistor in response to a first digital signal during the charging cycle; COL 3 line 70
storing energy from a power supply on an EL-lamp during the charging cycle; COL 2 line 63
selectively providing a discharging path from the EL-lamp to the power supply during a discharging cycle; COL 2 line 64 (COL 3 line 64)
cycling a second transistor in response to a second digital signal during the discharging cycle; and COL 4 line 7
returning energy stored on the EL-lamp to the power supply during the discharge cycle. COL 4 line 18

37. (New) The method of claim 36, further comprising:

inductively pumping energy to the EL-lamp in response to the cycling of the first transistor. SW 14 (COL 3 line 59) COL 3 line 25

38. (New) The method of claim 36, further comprising:

inductively pumping energy stored on the EL-lamp back to the power supply in response to the cycling of the second transistor. (COL 4 line 16) (COL 3 line 25)

39. (New) The method of Claim 36, wherein selectively providing a charging path from the power supply to the EL-lamp during the charging cycle further comprises:

selectively activating one or more switches.

COL 3 line 6
COL 4 line 36

40. (New) The method of claim 36, wherein selectively providing a discharging path from the EL-lamp to the power supply during the discharging cycle further comprises:

selectively activating one or more switches.

COL 3 line 43